Q Fever

Agent: *Coxiella burnetii* (bacteria)
Mode of Transmission: Inhalation of air contaminated with *Coxiella burnetii*. Most commonly, people are exposed to this organism via inhalation of infectious aerosols directly from birth fluids of infected animals or via inhalation of dust contaminated with dried birth fluids or tissues. Less common routes of transmission include ingestion of raw milk and dairy products or contact with contaminated clothing. Person-to-person transmission is rare.
Signs/Symptoms: Illness with Q fever has both acute and chronic forms. Approximately 50% of people infected with Q fever will develop the acute form. Acute Q fever is characterized by high fever, severe headache, fatigue, chills and muscles aches. Serious illness can progress to pneumonia or inflammation of the liver. Children with Q fever are less likely than adults to have symptoms and might have a milder illness. When symptomatic with acute Q fever, children are more likely to manifest gastrointestinal symptoms of illness and develop a skin rash. Chronic Q fever is a severe disease developing in less than 5% of patients exposed to the bacterium that causes Q fever, and is rarely reported in children. Endocarditis is the major form of chronic disease, comprising 60-70% of all reported cases. It may present within a few months after an acute infection or may manifest years later. Chronic disease can occur after symptomatic or asymptomatic infections. The three groups at highest risk for developing chronic Q fever are pregnant women, immunocompromised persons and patients with a pre-existing heart valve defect.
Prevention: Preventive measures include appropriate disposal of potentially infectious tissues and proper hygiene when handling animal birth material.
Other Important Information: Although infection has been confirmed in many species, cattle, sheep and goats are the main natural reservoirs for *C. burnetii*. The infectious form of these bacteria is highly resistant to heat, desiccation, and disinfectant substances, and can persist in the environment for long periods of time. Windborne particles containing infectious organisms can travel a half-mile or more, which may contribute to cases with no known animal contact. From 2000-2010, information associated with Q fever cases reported to the CDC indicated that 60% of patients reported no animal contact. This bacterium is classified by the CDC as a potential bioterrorism agent because it could easily be disseminated and result in a moderate amount of illness.

No cases of Q fever were reported in Virginia in 2016. Four cases were reported in 2014, three acute and one chronic. Of these, one acute case had a confirmed history of raw milk consumption and another reported travel to South America where raw dairy products may have been consumed. No specific risk factors were identified for the third acute case. The single chronic case from 2014 was associated with valvular heart disease. The five-year average for Q fever in Virginia is 2.0 cases per year.